

App. No. 10/708,224  
Amendment dated December 20, 2005  
Reply to Office action of September 20, 2005

### **REMARKS**

#### ***Rejections under 35 U.S.C. § 103***

Claims 1-4 stand rejected as being unpatentable over U.S. Pat. No. 6,071,465 to Kobayashi.

Although it may appear from the figures (Fig. 10 in particular) in the cited Kobayashi reference that the center axis of the shaft and the center axis of the substrate wafer-carrying side coincide, in the reference there is no teaching or suggestion as to displacement between the shaft center axis and the wafer-carrying side center axis exerting an influence on the temperature uniformity of the wafer-carrying side.

As set forth in paragraphs [0015] through [0017] of the specification, the present invention was brought about by discovering that displacement between the center axis of the shaft and the center axis of the substrate wafer-carrying side exerts an influence on the temperature uniformity of the wafer-carrying side. No mention is made in Kobayashi concerning displacement between the shaft center axis and the wafer-carrying side center axis.

The present invention involves the discovery that temperature uniformity in the wafer-carrying side of a wafer holder can be brought to within +1.0% by: rendering the planarity of the shaft-joining side of a wafer holder 0.5 mm or less, while making the surface roughness of the shaft-joining side be 5  $\mu\text{m}$  or less  $R_a$ ; rendering the planarity of the wafer-holder joining face of the shaft 0.5 mm or less, while making the surface roughness of the wafer-holder joining face be 5  $\mu\text{m}$  or less  $R_a$ ; making the difference in thermal expansion coefficient between the wafer holder and the shaft  $5 \times 10^{-6}$  K or less; and further, making displacement between the shaft center axis and the wafer-carrying side center axis be 5% or less of the wafer-carrying side diameter.

In Kobayashi, on the other hand, no teaching or suggestion of these limitations, as recited in claim 1 of the present application, is made.

Neither is any teaching or suggestion made of these limitations in the Aruga et al. and Ohashi references, cited in the previous Office action.

Lastly, it is respectfully pointed out that in the claim 1 recitation

said shaft joined to said shaft-joining side of said substrate such that a distance  $a$  between the center axis of said shaft and the axial center of

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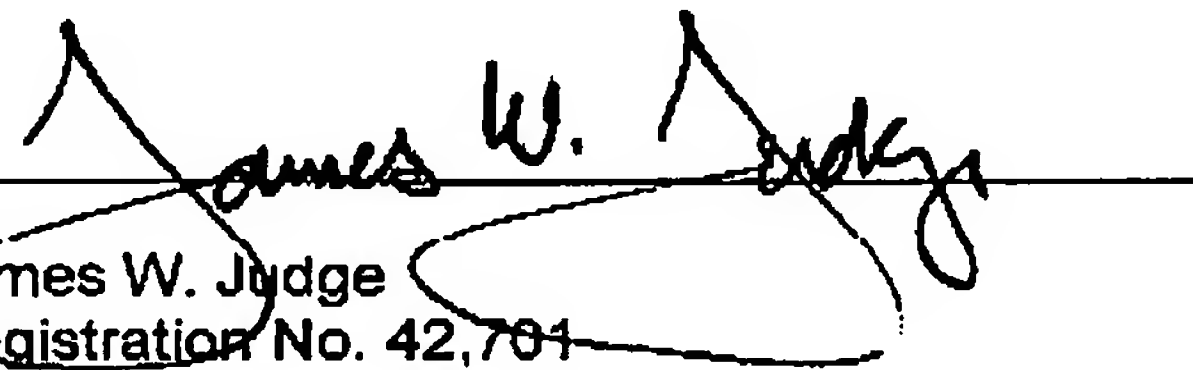
said wafer-carrying side of said substrate is 5% or less of the diameter  $L$  of the wafer-carrying side,

the wording is more specific than the Examiner's reading. That is, as shown in the figure in this specification, the distance  $a$  is between the shaft axial center, and the axial center of *the wafer-carrying side* of the substrate, not the underside, which is where the shaft is attached. And the limitation on the distance  $a$  is expressly with respect to the diameter  $L$  of the *wafer-carrying side*, not the underside. Not only does none of the prior art of record in the instant application make any teaching or suggestion as to displacement between the shaft center axis and the substrate wafer-carrying side axial center, in particular, none of the references even begins to approach the issue with the specificity of the claim 1 limitation quoted above.

Accordingly, Applicant courteously urges that this application is in condition for allowance. Reconsideration and withdrawal of the rejections is requested. Favorable action by the Examiner at an early date is solicited.

Respectfully submitted,

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